



U.S. Department of Energy
Office of River Protection

P.O. Box 450
Richland, Washington 99352

01-OSR-0496

Mr. Ron F. Naventi, Project Manager
Bechtel National, Inc.
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Naventi:

CONTRACT NO. DE-AC27-01RV14136 – OFFICE OF SAFETY REGULATION APPROVAL
OF AUTHORIZATION BASIS CHANGE NOTICE 24590-WTP-ABCN-ESH-01-016,
PRETREATMENT RECONFIGURATION

- Reference:
1. BNI letter from A. R. Veirup, to M. K. Barrett, ORP, "Transmittal for Approval – Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-016, Revision 0, Pretreatment Reconfiguration," CCN 024496, dated November 30, 2001.
 2. BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Additional Information for Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-016, Revision 0, Pretreatment Reconfiguration," CCN 026375, dated December 18, 2001.
 3. ORP letter from W. J. Taylor to R. F. Naventi, BNI, "Pretreatment Facility Design Changes," 01-AMPD-060, dated August 20, 2001.
 4. BNI letter from R. F. Naventi to W. J. Taylor, ORP, "Pretreatment Facility Design Changes," CCN-024325, dated November 12, 2001.

This letter approves the Authorization Basis Change Notice (ABCN) submitted by Bechtel National, Inc. (BNI) in Reference 1. Additional information supplementing BNI's safety evaluation was provided in Reference 2. The ABCN revises the River Protection Project – Waste Treatment Plant (RPP-WTP) authorization basis to combine the Low-Activity Waste Pretreatment Plant (LPP) and pretreatment facilities into a single pretreatment facility. Documents impacted by this ABCN include the following: fundamental aspects of design in the Initial Safety Analysis Report (ISAR); significant and bounding hazards in the Hazard Analysis Report (HAR); the Limited Construction Authorization Request (LCAR); and the Limited Construction Authorization Agreement (LCAA).

The OSR review and approval of the ABCN is documented in the attached safety evaluation (Attachment 1). Sections of the ISAR, HAR, and LCAR should be updated accordingly. As part of the change process, ISAR, HAR, and LCAR pages affected by this ABCN should be

forwarded to the OSR. Additionally, Attachment 2 to this letter provides an update to the LCAA incorporating the changes associated with ABCN 24590-WTP-ABCN-ESH-01-016. Specifically, reference to excavation drawings are replaced with reference to concrete general arrangement drawings. Please sign and return the updated LCAA.

On November 30, 2001, BNI requested approval of this ABCN and revision of the LCAA by December 14, 2001, to support the construction schedule. The OSR has agreed to a 30 day period for review and approval of ABCNs that are adequately documented. In this instance, BNI did not provide adequate notice of this proposed ABCN. BNI is encouraged to plan ABCN submittals so that 30 days is available for OSR review.

ORP raised concerns with the capacity and life cycle operability of the reconfigured pretreatment facility in Reference 3. BNI's response, in Reference 4, did not resolve these concerns. As a result, ORP has asked the Technical Integrated Baseline Development Team (TIBDT) to assess the capacity and life-cycle operability of the reconfigured pretreatment facility. We anticipate the TIBDT team will complete its evaluation in early January 2001. Approval of this ABCN does not imply ORP acceptance of BNI's response to pretreatment facility concerns.

Please direct any questions to Mr. R. A. Gilbert of my staff on (509) 376-2310. Nothing in this letter should be construed as changing the Contract, DE-AC27-01RV14136. If, in my capacity as the Safety Regulation Official, I provide any direction that your company believes exceeds my authority or constitutes a change to the Contract, you will immediately notify the Contracting Officer and request clarification prior to complying with the direction.

Sincerely,

Robert C. Barr
Safety Regulation Official
Office of Safety Regulation

OSR:RAG

Attachments:

1. Safety Evaluation Report
2. LCAA, Rev. 1

**Safety Evaluation by the DOE Office of Safety Regulation
Of Proposed Authorization Basis Change Notice
24590-WTP-ABCN-ESH-01-016,
Pretreatment Reconfiguration**

1.0 Introduction

The River Protection Project–Waste Treatment Plant (RPP-WTP) is a project to construct a facility to treat and immobilize High-Level (radioactive) Waste (HLW) contained in underground tanks at the Hanford Site. The regulatory process associated with RPP-WTP requires Bechtel National, Inc. (the Contractor), assigned to design and build the facility to maintain updated authorization basis documents. Authorization basis documents constitute the information provided by the Contractor to the U.S. Department of Energy, Office of River Protection, Office of Safety Regulation (OSR) that describe radiological, nuclear, and process safety requirements that form the bases for regulatory authorization of the related activities.

The Hazards Analysis Report (HAR), the Initial Safety Analysis Report (ISAR), and the Limited Construction Authorization Request (LCAR) are authorization basis documents. The Contractor is required to update these documents whenever changes are identified in the significant and bounding hazards described in the HAR, changes are identified in the fundamental aspects of design described in the ISAR, or the scope of work planned under the LCAR changes. This safety evaluation of proposed changes to significant and bounding hazards in the HAR, fundamental aspects of design in the ISAR, and LCAR scope is based in part on information provided by the Contractor in Authorization Basis Change Notice (ABCN) 24590-WTP-ABCN-ESH-01-016,¹ with additional information submitted December 18, 2001.²

2.0 Background

The current RPP-WTP authorization basis includes two pretreatment facilities (pretreatment and Low-Activity Waste Pretreatment Plant (LPP)) for preparing waste received from the Tank Farm Operations Contractor (CH2M Hill Hanford Group) for immobilization in Low-Activity Waste (LAW) and HLW vitrification facilities.

HLW is received from the Tank Farm Operations Contractor into the pretreatment facility. The waste is comprised of liquid and solids carried in the liquid. The liquid fraction is treated so that it can be vitrified and disposed on the Hanford Site as LAW. The pretreatment facility accomplishes this by separating the liquid fraction from the solids and removing cesium. Some wastes with higher concentrations of organic complexants receive additional treatment through precipitation and isotopic dilution to remove strontium and transuranics. This treated liquid is

¹ BNI letter from A. R. Veirup, to M. K. Barrett, ORP, "Transmittal for Approval – Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-016, Revision 0, Pretreatment Reconfiguration," CCN 024496, dated November 30, 2001.

² BNI letter from A. R. Veirup to M. K. Barrett, ORP, "Additional Information for Authorization Basis Change Notice 24590-WTP-ABCN-ESH-01-016, Revision 0, Pretreatment Reconfiguration," CCN 026375, dated December 18, 2001.

transferred to the LPP where technetium is removed and the LAW is concentrated and stored prior to delivery to LAW vitrification.

Solids received in the pretreatment facility are washed and potentially caustic leached to remove soluble constituents. The washed solids are blended with cesium, technetium, strontium, and transuranic intermediate products generated from treating the liquid fraction. This slurry is stored in the pretreatment facility and then transferred to HLW vitrification. The Contractor proposed to combine the LPP with the pretreatment facility in ABCN 24590-WTP-ABCN-ESH-01-016.

3.0 Evaluation

3.1 Applicable Requirements

RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*.

Hazards Analysis Report (HAR), BNFL-5193-HAR-01, Revision 2. (As described in Section 3.3.1.8 of the ISMP, only those portions of the HAR that constitute bounding or significant hazards are considered to be part of the authorization basis)

Initial Safety Analysis Report (ISAR), BNFL-5193-ISAR-01, Revision 2. (As described in Section 3.3.1.3 of the ISMP, those portions of the ISAR that relate to fundamental aspects of design are part of the authorization basis)

Limited Construction Authorization Request (LCAR), 24590-WTP-LCAR-ESH-01-001, Revision 1.

3.1 Authorization Basis Deviations

3.1.1 ISAR Fundamental Aspects of Design

The Contractor proposed deleting reference to the LPP in the ISAR and consolidating the functions performed by the LPP within the pretreatment facility.

The Contractor's basis for making this change is primarily economic. Considerable cost savings may be achieved due to elimination of duplicate support systems, utilities, and heating, ventilation, and air conditioning systems. Combining the facilities also makes space available for a separate analytical laboratory.

The processes performed in the consolidated facility have not changed from those planned for the separate LPP and pretreatment facilities. At the level of design detail currently in the ISAR, hazards associated with pretreatment operations are reduced. Specifically, hazards associated with potential errors in transfers of non-pretreated LAW or HLW to the LPP and hazards associated with transfer line leaks are reduced. The reconfigured pretreatment facility locates the unit operations associated with the LPP in C5 or C3 process cells and C5 hot cells.

The ABCN states that no changes to the applicable codes or standards in the Safety Requirements Document (SRD) are required for this change, and the review confirmed this, at the level of design detail currently in the ISAR.

3.1.2 HAR Significant and Bounding Hazards

The Contractor proposed revisions to significant and bounding hazards identified in the HAR based on ISM Cycle I reviews on the reconfigured pretreatment facility. Changes include the following:

- The reconfigured facility eliminates the C2 pump and valve gallery. This eliminates the event where process liquor is spilled onto the C2 pump and valve gallery during component maintenance.
- The reconfigured facility eliminates flasking of remotely maintained equipment. This eliminates the hazardous event where a flask is dropped onto other equipment.
- Envelope A, B, and C feed is now received and stored in four 1422 cubic meter tanks versus six 1302 cubic meter tanks.
- The reconfigured facility stores Sr/TRU product in four 371 cubic meter tanks versus a combination of three smaller tanks.

Elimination of the C2 pump and valve gallery and flasking operations eliminates some pretreatment facility hazards. Primary hazards associated with waste storage tanks include direct radiation from vessels and piping, leaks and spills of radioactive material that may enter the workplace or environment, and accumulation of hydrogen in vessels resulting in explosive hazards. The hazards associated with the tanks have been previously assessed. While the consequences of failure of these in-cell tanks is larger, controls to address these hazards continue to be adequate and include the following:

- Vessels will be located in cells that provide radiation shielding and confinement.
- Cells will be ventilated by the C5 ventilation system and filtered to acceptable contamination levels.
- Vessels will be of high quality and be designed for the life of the facility.
- Vessels will be vented through the process vessel vent system to prevent accumulation of flammable gasses.

The ABCN states that no changes to the applicable codes or standards in the SRD are required for this change, and the review confirmed this, at the level of design detail currently in the ISAR.

3.1.3 LCAR Scope

The Contractor proposed revisions to the LCAR to reflect the consolidation of LPP with the pretreatment facility and delete the referenced excavation drawings and replace them with foundation design drawings. The specific drawings revisions are identified in the following table.

Old Drawing	New Drawing
DWG-W375-G00053 LAW Excavation And Mudmat	24590-LAW-DB-S13T-00003 LAW Vitrification Building Main Building Concrete Key Plan At El (-)21'-0"
DWG-W375-G00054 HLW Excavation And Mudmat	24590-HLW-DB-S13T-00001 HLW Vitrification Building Concrete General Arrangement Plan At El.(-)21'-0"
DWG-W375-G00055 Pretreatment Excavation And Mudmat	24590-PTF-D0-S13T-00001 Pretreatment Facility Concrete Foundation Outline General Arrangement Plan for Excavation
DWG-W375-G00056 LPP Excavation And Mudmat	None

The ABCN states that the replacement drawings for the LAW and HLW vitrification facilities are consistent with the balance of the authorization basis, do not introduce a radiological, nuclear, or process safety issue, and do not substantially alter the location of the facility or the dimensions of the excavations, and the review confirmed this.

Changes to the pretreatment facility foundation are substantial. The foundation is substantially longer. The OSR reviewed the Geotechnical Investigation for the RPP-WTP site and concluded that the revised size and location of the pretreatment facility should be acceptable with respect to soil and structure system performance. From a geological perspective, soil subsurface conditions are consistent and laterally continuous across the RPP-WTP site. The Contractor plans to perform three additional seismic cone penetrometer tests to provide additional confirmation of the geotechnical investigations.

The replacement of drawings in the LCAR will require amendment of the LCAA. The ABCN states that no changes to the applicable codes or standards in the SRD are required for this change, and the review confirmed this.

4.0 Conclusions

On the basis of the considerations described above, the OSR has concluded that there is reasonable assurance that the health and safety of the public and the workers will not be adversely affected by the proposed amendment to the ISAR fundamental aspects of design, HAR significant and bounding hazards, and LCAR. The proposed changes comply with applicable laws, regulations, and requirements, and it is in conformance with DOE-stipulated safety standards and principles. Accordingly, this review concludes that the proposed changes to the

ISAR, HAR, and LCAR would not adversely affect the objectives of the RPP-WTP authorization basis in terms of the criteria delineated above.

5.0 References

24590-LAW-DB-S13T-00003, LAW Vitrification Building Main Building Concrete Key Plan At El (-)21'-0"

24590-HLW-DB-S13T-00001, HLW Vitrification Building Concrete General Arrangement Plan At El.(-)21'-0"

24590-PTF-D0-S13T-00001, Pretreatment Facility Concrete Foundation Outline General Arrangement Plan for Excavation

DWG-W375-G00053, LAW Excavation and Mudmat, Revision B

DWG-W375-G00054, HLW Excavation and Mudmat, Revision A

DWG-W375-G00055, Pretreatment Excavation and Mudmat, Revision B

DWG-W375-G00056, LPP Excavation and Mudmat, Revision A

Geotechnical Investigation, River Protection Project-Waste Treatment Plan, Project No. DE-AC06-96RL13308, Subcontract No. W375-WT5C99-1036, 200 East Area, Hanford Site, Richland, Washington, Shannon and Wilson Inc., May 2000.

Hazards Analysis Report (HAR), BNFL-5193-HAR-01, Revision 2

Initial Safety Analysis Report (ISAR), BNFL-5193-ISAR-01, Revision 2

Limited Construction Authorization Request (LCAR), 24590-WTP-LCAR-ESH-01-001, Revision 1

RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*

Limited Construction Authorization Agreement, Revision 0
Between
The U.S. Department of Energy, Office of River Protection
and
Bechtel National, Inc.

Limited Construction Authorization Agreement, Revision 1

Between

The U.S. Department of Energy, Office of River Protection

and

Bechtel National, Inc.

1. Purpose

This Limited Construction Authorization Agreement (hereafter referred to as the "Agreement") identifies the scope of the limited construction work authorized by the U.S. Department of Energy, Office of River Protection (ORP) and the terms and conditions associated with ensuring the achievement of adequate nuclear, radiological, and process safety.

2. Scope of the Authorization Agreement

This Agreement applies to the performance of specified limited construction activities associated with the River Protection Project Waste Treatment Plant (RPP-WTP) performed by Bechtel National, Inc. (BNI) and its subcontractors. The RPP-WTP is a large radiochemical processing facility located in the 200 East Area of the Hanford site that will treat and immobilize Hanford tank wastes. RPP-WTP limited construction activities include RPP-WTP site preparation, excavation, placing mud mats, and providing temporary and permanent facilities that will be needed for construction of the primary RPP-WTP process buildings. The specific activities authorized under this Agreement are:

- Construction activities detailed in the Limited Construction Authorization Request (LCAR), Table 1, "WTP Project Limited Construction Activities"
- The radiological surveys, potential radiological contamination control and remediation activities, and the use of industrial radioactive sources as described in the LCAR, Section 4.0, "Radiological Safety."

3. DOE Basis for Approval

The ORP Office of Safety Regulation (OSR) has performed safety reviews and conducted oversight of RPP-WTP contractors in the areas of radiological, nuclear, and process safety. These safety reviews and oversight activities have been conducted in accordance with the specific regulatory actions established in the RPP-WTP contracts. Based on these reviews and oversight activities, the ORP has concluded that limited construction activities, if properly performed, will achieve adequate safety. The following specific regulatory actions, safety reviews associated with amendments to these documents, and oversight activities have led to this conclusion:

- a. The Standards Approval regulatory action, which included the following reviews and approvals:
 - Review and approval of the Safety Requirements Document (SRD) and the Hazards Analysis Report (HAR) as documented in RL/REG-98-01, *DOE Regulatory Unit Evaluation Report of the BNFL Inc. Safety Requirements Document* and RL/REG-98-20, *DOE Regulatory Unit Evaluation of BNFL Inc. Safety Requirements Document*.

- Review and approval of the Integrated Safety Management Plan (ISMP) as documented in RL/REG-98-19, *DOE Regulatory Unit Evaluation of BNFL Inc. Integrated Safety Management Plan*.
- b. The Initial Safety Evaluation regulatory action, which included review and approval of the Initial Safety Analysis Report (ISAR) as documented in RL/REG-98-09, *DOE Regulatory Unit Initial Safety Evaluation Report of the BNFL Inc. Initial Safety Assessment*.
- c. The Limited Construction Authorization regulatory action, which included the following reviews and approvals:
 - Review and approval of the Limited Construction Authorization Request (LCAR) as documented in ORP/OSR-2001-11, *Safety Evaluation Report of Contractor's Limited Construction Authorization Request (LCAR SER)*.

As part of the LCAR review process, the ORP considered the safety basis documentation requirements of 10 CFR 830. 10 CFR 830.206 establishes that limited construction activities may be authorized without approval of a preliminary documented safety analysis if DOE determines that the activities are not detrimental to public health and safety and are in the best interest of DOE.

Based on the safety reviews and oversight activities described in this section, the ORP has determined that authorized limited construction activities are not detrimental to public health and safety.

As described in the LCAR SER, the OSR determined from a review of this information that performing limited construction activities will increase the probability of initiating WTP hot commissioning within DOE WTP schedule commitments. In addition, the ORP Office of Assistant Manager for Project Delivery determined that there was potential cost benefits associated with commencing limited construction activities. On this basis, the ORP concluded that authorizing limited construction activities is in the best interest of DOE.

- Review and approval of the Radiation Protection Program for Design and Construction (RPP) as documented in ORP/OSR-2001-05, *Evaluation of the BNI Radiation Protection Plan for Design and Construction, Revision 5A*.
- Review and approval of the Quality Assurance Manual (QAM) as documented in ORP/OSR-2001-10, *Office of Safety Regulation Evaluation of the River Protection Project Waste Treatment Plant Contractor's Quality Assurance Manual*.
- d. The Oversight Process regulatory action, which included the following oversight activities.
 - OSR inspections of WTP contractor activities during the WTP design phase. These inspection activities are established in RL/REG-98-05, *Inspection Program Description for the Regulatory Oversight of the RPP-WTP Contractor (IPD)*. Safety issues raised in these inspections are resolved in accordance with the Corrective Action Program established in RL/REG-98-06, *Corrective Action Program Description*. The ORP has determined that there are no outstanding safety issues associated with the inspection program that would have an adverse safety impact on limited construction activities.

- The OSR conducted a Limited Construction Authorization Readiness Inspection in accordance with the IPD. The OSR determined that necessary BNI programs and procedures are in place, and that BNI is ready to commence LCAR Table 1-2 "Phase A" activities. The inspection is documented in OSR Inspection Report IR-01-004, *Limited Construction Authorization Readiness Inspection*. Inspection Report IR-01-004 identifies that BNI was not ready to commence LCAR Table 1-2 "Phase B" activities. The conditions that must be satisfied prior to commencing LCAR Table 1-2 "Phase B" activities are established in Section 5.f below.

4. Authorization Basis

The RPP-WTP authorization basis is the composite of information provided by RPP-WTP contractors in response to radiological, nuclear, and process safety requirements. The implementation of these requirements forms the basis upon which the DOE grants permission to perform regulated activities. The following are the specific documents (including material incorporated by reference) provided by BNI that are the basis for DOE's decision to authorize limited construction activities.

- a. Safety Requirements Document (SRD), Volume II, BNFL-5193-SRD-01-02, Revision 4b, as amended.
- b. Integrated Safety Management Plan (ISMP), BNFL-5193-ISP-01, Revision 6, as amended.
- c. Hazards Analysis Report (HAR), BNFL-5193-HAR-01, Revision 2, as amended. As described in Section 3.3.1.8 of the ISMP, only those portions of the HAR that constitute bounding or significant hazards are considered to be part of the authorization basis.
- d. Portions of the Initial Safety Analysis Report (ISAR), BNFL-5193-ISAR-01, Revision 2, as amended. As described in Section 3.3.1.3 of the ISMP, those portions of the ISAR that relate to fundamental aspects of design are part of the authorization basis. Also, those portions of the ISAR that are incorporated by reference in the SRD and ISMP are part of the authorization basis.
- e. Limited Construction Authorization Request (LCAR), 24590-WTP-LCAR-ESH-01-001, Revision 1, as amended.
- f. The following drawings:
 - [24590-LAW-DB-S13T-00003, LAW Vitrification Building Main Building Concrete Key Plan At El \(-\)21'-0"](#)
 - [24590-HLW-DB-S13T-00001, HLW Vitrification Building Concrete General Arrangement Plan At El.\(-\)21'-0"](#)
 - [24590-PTF-D0-S13T-00001, Pretreatment Facility Concrete Foundation Outline General Arrangement Plan for Excavation](#)
- g. Quality Assurance Manual (QAM), 24590-WTP-QAM-QA-01-001, Revision 0, as amended.
- h. Radiation Protection Program for Design and Construction (RPP), BNFL-TWP-SER-003, Revision 8, as amended.

5. Terms and Conditions

- a. Limited construction activities shall be performed in accordance with the RPP-WTP authorization basis.
- b. BNI shall maintain the authorization basis current with respect to changes made to the facility design and administrative controls, and in light of significant new safety information.
 - (1) BNI-initiated changes to the authorization basis, with the exception of changes to the drawings identified in 4.f above, shall be performed in accordance with RL/REG-97-13, *Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*.
 - (2) BNI may make changes to the drawings identified in 4.f above without prior DOE approval if:
 - Changes are consistent with the balance of the authorization basis, and
 - BNI has determined that there is no radiological, nuclear, and process safety issue associated with the change, and
 - The changes do not substantially alter the location of any of the primary WTP process facilities or the dimensions of the excavations associated with these facilities.

NOTE: Proposed changes to the drawings identified in 4.f that do not meet the above criteria shall be submitted to ORP for approval prior to implementation. Replacement of drawings identified in 4.f above are authorized subject to the approval criteria described in 5.b.(2) above.
- c. BNI shall incorporate and implement new or revised radiological, nuclear, and process safety requirements as directed by the ORP in accordance with RL/REG-98-14, *Office of Safety Regulation Position on New Safety Information and Back-fits*.
- d. BNI shall identify and correct conditions that do not conform to the RPP-WTP authorization basis in accordance with the ISMP, which describes the BNI's implementation of RL/REG-98-06, *Corrective Action Program Description*.
- e. BNI shall report occurrences that involve nuclear, radiological, or process safety to the ORP in accordance with the Construction Occurrence Reporting Plan for Limited Construction (LCAR, Appendix B, Revision 0, as amended).
- f. Prior to commencing LCAR Table 1-2 "Phase B" activities the following shall be completed:
 - (1) BNI shall complete implementation of the programs and procedures that are necessary to ensure LCAR Table 1-2 "Phase B" activities are accomplished in accordance with the authorization basis.
 - (2) BNI shall inform ORP that it is ready to commence LCAR Table 1-2 "Phase B" activities.

- (3) The ORP will perform sufficient inspections to verify that BNI is ready to commence LCAR Table 1-2 "Phase B" activities. Upon successful completion of this verification and prior to commencement of Phase B activities, the ORP will concur in writing with BNI's readiness determination.

6. Contractor Qualification

Limited construction activities will be performed under DOE Contract DE-AC27-01RV14136 for the design, construction, and commissioning of the RPP-WTP. Evaluation of contractor qualifications was a key factor in the solicitation process associated with awarding the Contract. During the solicitation process, the DOE Source Evaluation Board determined that BNI was qualified to perform the work specified in the Contract. In addition, during the LCAR review described in Section 3.c above, the ORP reviewed information provided in the LCAR specifically related to BNI's qualifications to perform important-to-safety activities and determined that the information adequately demonstrated BNI's qualifications to safely perform the activities authorized in this Agreement. On this basis, the ORP has determined that BNI is qualified to perform important-to-safety RPP-WTP limited construction activities.

7. Agreement

This Agreement is subject to the conditions specified herein, and ORP and BNI agree to these conditions. This Agreement becomes effective upon the date of signature by both parties and shall expire upon termination of Contract DE-AC27-01RV14136, completion of authorized limited construction activities, or when this Agreement is superseded by a subsequent authorization agreement. This Agreement does not alter any terms or conditions specified in Contract DE-AC27-01RV14136.

_____/_____
Signature Date

H. L Boston, Manager
Office of River Protection
U.S. Department of Energy

_____/_____
Signature Date

R. F. Naventi
Project Manager
Bechtel National, Inc.